



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

646.3015

Job Sheet 168222

37234

Part No: 646.3015

Job Qty: 12 ea

Part Name: Blade



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 11/13/17

Job Tracking No:

Due Date: 11/28/17

Created By: Linda Lacelle

Type: Stock

Description:

Note: DWG REV N/C SHEET 12 IPP REV:A NEW ISSUE 12/11/09 JFS VERIFY BY: JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	12 Ea	11/27/17	0.00	0.00		Start Up Machining		
100	Bandsaw	12 pcs	11/27/17	0.00	0.19		Bandsaw1		
110	CNC Vertical Machining	12 pcs	11/27/17	0.18	15.06		HAAS 1		
120	QC	12 pcs	11/27/17	0.00	0.00		QC2		
130	QC	12 pcs	11/27/17	0.00	0.00		QC8		
140	Outsource	12 pcs	11/27/17	0.00	0.00		Outsource1		
150	Packaging	12 pcs	11/27/17	0.00	0.00		Packaging2		
155	QC	12 pcs	11/27/17	0.00	0.00		QC5		
160	SprayPaint	12 pcs	11/28/17	0.00	0.39		Spray Paint		
170	QC	12 pcs	11/28/17	0.00	0.00		QC14		
180	Packaging	12 pcs	11/28/17	0.00	0.00		Packaging3		
190	QC21-SA	12 Ea	11/28/17	0.00	0.00		QC21		

Part Op **100** - Cut Blank at 6.580"

Descriptions: **110** - 1-Machine per folio FB150

140 - HEAT TREAT AS PER DWG, SEE NOTE #3

160 - PRIME AS PER DWG, SEE NOTE #4

180 - ***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***

JAN 23 2018

DAS
21
9-88

FEB 09 2018

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	MSTEEL-A2-B0.500X1.250	7	53	0	0

Part Specifications

Specifications could not be found.

DART
AEROSPACE
S031042

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

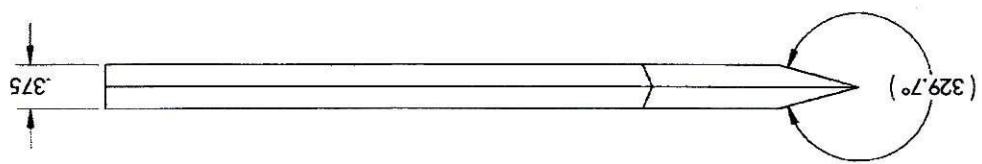
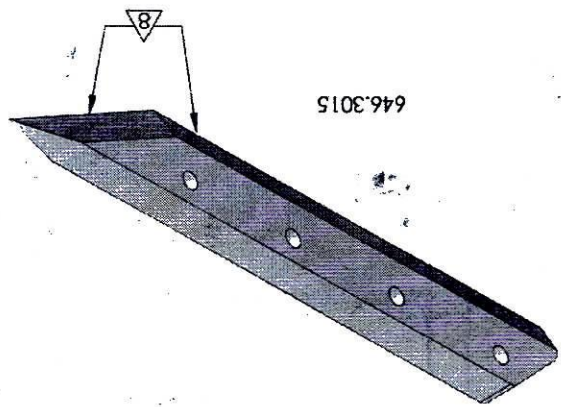
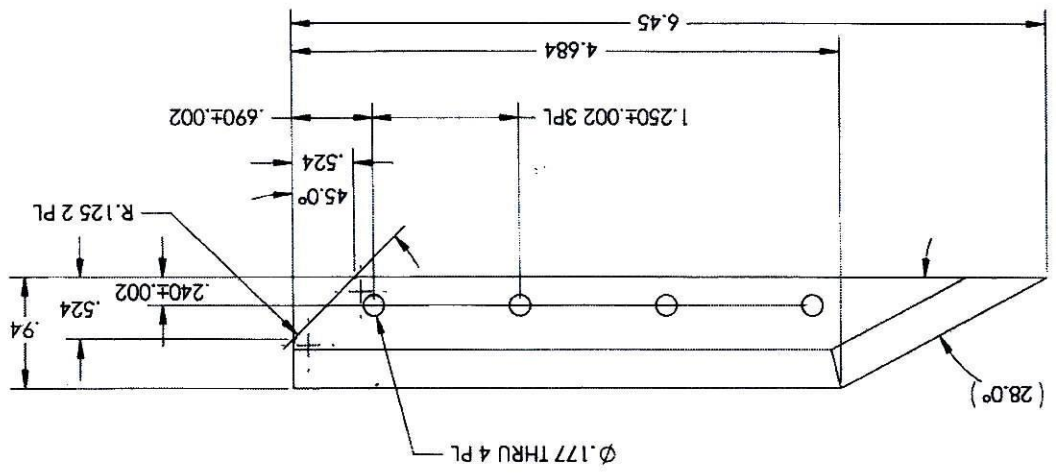
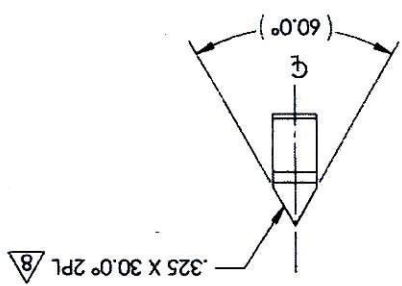


Blade

PART NO: 646.3015
Revision:
Operation: Start up Operation
Change No:

Mfg Date: 01/10/18 Job No: 168222
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APICAL INDUSTRIES		2608 TEMPLE HEIGHTS DR OCEANSIDE, CA 92056-3512 (760) 724-5300	
LOWER CUTTER ASSY		SCALE NONE	
REV	DATE	BY	CHKD
1	07/24/26	B	N/C



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 168222

DAS
30
68-6

NOV 16 2017

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REV	DESCRIPTION	DATE	APPROVED

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabelled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					



Dart Aerospace Ltd.
1270 Aberdeen St.
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO038843**

Supplier: MEI001-VC
Meteor Inc.
560 Boul. Arthur Sauve
Saint-Eustache
QC
J 5 8 2 Mac 3
Phone: 450 473 1884
Fax: 450 491 5498

PO No: PO038843
PO Date: 1/23/18
Due Date: 1/30/18
Purchase Order
Revision:
Revision Date:
Ship-To Contact: Phone:

EMMAILED
JAN 26 2018

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613 632 5200

Via: Ground
Payment Terms: Net 30
Weight Terms:
Special Comments:

RECEIVED \$

Items

Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	170134	RBA9937-5	Tail Rotor Nut Wrench "G" Model (Rb Design) HEAT TREATING 1- Issue P/O to Metcore P/O _____ RC 45-47 2- Bead blast 3- Certificate of Conformity is required ***NOTE*** DROP SHIP TO FINISHER Metcore to ship directly to Groupe Attech	Firmed	1/30/18	2 pcs	0 pcs	2 pcs	\$75.00/pcs	\$150.00
Line Item Note Parts made from 4130N Sheet 139 Ship Directly to Groupe Attech										
2	170135	RBA9937-5	Tail Rotor Nut Wrench "G" Model (Rb Design) HEAT TREATING 1- Issue P/O to Metcore P/O _____ RC 45-47 2- Bead blast 3- Certificate of Conformity is required ***NOTE*** DROP SHIP TO FINISHER Metcore to ship directly to Groupe Attech	Firmed	1/30/18	2 pcs	0 pcs	2 pcs	\$75.00/pcs	\$150.00

Line Item Note Parts made from 4130N Sheet 139
Ship Directly to Groupe Attech

Items										
Line Item	JSL	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
3	169324	RBD29823-5A	Ball Tool - 1/2" Wrench 1/2" Model (new Design) HARDENING HSS-RO to Metcor; R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14 R15 R16 R17 R18 R19 R20 R21 R22 R23 R24 R25 R26 R27 R28 R29 R30 R31 R32 R33 R34 R35 R36 R37 R38 R39 R40 R41 R42 R43 R44 R45 R46 R47 R48 R49 R50 R51 R52 R53 R54 R55 R56 R57 R58 R59 R60 R61 R62 R63 R64 R65 R66 R67 R68 R69 R70 R71 R72 R73 R74 R75 R76 R77 R78 R79 R80 R81 R82 R83 R84 R85 R86 R87 R88 R89 R90 R91 R92 R93 R94 R95 R96 R97 R98 R99 R100	Firmed	1/30/18	4 pcs	0 pcs	4 pcs	\$75.00/pcs	\$300.00
Line Item Note: Parts made from 4130 Steel - 100 Ship directly to Group										
4	170019	RB877528-4-7	1/2" Ball Cutter R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14 R15 R16 R17 R18 R19 R20 R21 R22 R23 R24 R25 R26 R27 R28 R29 R30 R31 R32 R33 R34 R35 R36 R37 R38 R39 R40 R41 R42 R43 R44 R45 R46 R47 R48 R49 R50 R51 R52 R53 R54 R55 R56 R57 R58 R59 R60 R61 R62 R63 R64 R65 R66 R67 R68 R69 R70 R71 R72 R73 R74 R75 R76 R77 R78 R79 R80 R81 R82 R83 R84 R85 R86 R87 R88 R89 R90 R91 R92 R93 R94 R95 R96 R97 R98 R99 R100	Firmed	1/30/18	5 pcs	0 pcs	5 pcs	\$60.00/pcs	\$300.00
Line Item Note: Parts made from T-01 Steel - 100 Ship directly to KG Group										
5	168220	646.3013	1/2" Ball Cutter R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14 R15 R16 R17 R18 R19 R20 R21 R22 R23 R24 R25 R26 R27 R28 R29 R30 R31 R32 R33 R34 R35 R36 R37 R38 R39 R40 R41 R42 R43 R44 R45 R46 R47 R48 R49 R50 R51 R52 R53 R54 R55 R56 R57 R58 R59 R60 R61 R62 R63 R64 R65 R66 R67 R68 R69 R70 R71 R72 R73 R74 R75 R76 R77 R78 R79 R80 R81 R82 R83 R84 R85 R86 R87 R88 R89 R90 R91 R92 R93 R94 R95 R96 R97 R98 R99 R100	Firmed	1/30/18	12 pcs	0 pcs	12 pcs	\$3.324468/pcs	\$39.89
Line Item Note: Parts made from T-01 Steel - 100 Ship directly to KG Group										
6	168222	646.3015	1/2" Ball Cutter R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14 R15 R16 R17 R18 R19 R20 R21 R22 R23 R24 R25 R26 R27 R28 R29 R30 R31 R32 R33 R34 R35 R36 R37 R38 R39 R40 R41 R42 R43 R44 R45 R46 R47 R48 R49 R50 R51 R52 R53 R54 R55 R56 R57 R58 R59 R60 R61 R62 R63 R64 R65 R66 R67 R68 R69 R70 R71 R72 R73 R74 R75 R76 R77 R78 R79 R80 R81 R82 R83 R84 R85 R86 R87 R88 R89 R90 R91 R92 R93 R94 R95 R96 R97 R98 R99 R100	Firmed	1/30/18	12 pcs	0 pcs	12 pcs	\$3.324468/pcs	\$39.89
Line Item Note: Parts made from T-01 Steel - 100 Ship directly to KG Group										
7	168230	646.3314	1/2" Ball Cutter R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14 R15 R16 R17 R18 R19 R20 R21 R22 R23 R24 R25 R26 R27 R28 R29 R30 R31 R32 R33 R34 R35 R36 R37 R38 R39 R40 R41 R42 R43 R44 R45 R46 R47 R48 R49 R50 R51 R52 R53 R54 R55 R56 R57 R58 R59 R60 R61 R62 R63 R64 R65 R66 R67 R68 R69 R70 R71 R72 R73 R74 R75 R76 R77 R78 R79 R80 R81 R82 R83 R84 R85 R86 R87 R88 R89 R90 R91 R92 R93 R94 R95 R96 R97 R98 R99 R100	Firmed	1/30/18	10 pcs	0 pcs	10 pcs	\$3.324468/pcs	\$33.24

Items										
Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
8	168231	646.3315	PLATE ALUMINUM 6061 T6 FINISH: BEAT TREAT 1/20-02-00 RUCKWELT HERONNEUS PARTIAL MADE FROM ALUMINUM 6061 T6 PLEASE NOTE: DETAIL DRAWING REQUIRED	Firmed	1/30/18	10 pcs	0 pcs	10 pcs	\$3.324468/pcs	\$33.24
9	168232	646.3316	PLATE ALUMINUM 6061 T6 FINISH: BEAT TREAT 1/20-02-00 RUCKWELT HERONNEUS PARTIAL MADE FROM ALUMINUM 6061 T6 PLEASE NOTE: DETAIL DRAWING REQUIRED	Firmed	1/30/18	10 pcs	0 pcs	10 pcs	\$3.324468/pcs	\$33.24
10	168266	646.9711	PLATE ALUMINUM 6061 T6 FINISH: BEAT TREAT 1/20-02-00 RUCKWELT HERONNEUS PARTIAL MADE FROM ALUMINUM 6061 T6 PLEASE NOTE: DETAIL DRAWING REQUIRED	Firmed	1/30/18	40 pcs	0 pcs	40 pcs	\$3.32447/pcs	\$132.98
									Grand Total: \$1,212.50	
Order Notes										
Procurement Quality Clauses A005 right of entry A012 chemical and physical test report A016 personnel qualification A017 raw material identification (as applicable) A022 Apical Processing A024 process certifications A026 certification of material conformance A041 quality management system A042 part notification by supplier A043 retention of quality documents A048 counterfeit parts avoidance, detection, investigation and disposition program A049 supplier awareness Terms & Condition of Purchasing (Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation										

Plex 1/26/18 8:31 AM dart.lavoie.chantal

METCOR INC.

555 ROUTE ARTHUR-SAUVE, ST-EUSTACHE, QC, J7R 2A5

Tél: 450-473-1284

Téléfax / Fax administration: 450-491-5498

Téléfax / Fax production: 450-491-5494

Certificat de Conformité

Certificate of Compliance

BON DE TRAVAIL CHARGEMENT

order

386

324794

1

CLIENT / customer: DA

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

CN KSA MK

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

CN KSA MK

COMMANDE DU CLIENT client order no.	CLASSIFICATION PIÈCE part classification	MATÉRIEL materials	MAÎTRE D'ŒUVRE prime contractor	PROG. N°
88843	N/A	A2		

SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

MAC HARDEN

HARDEN AND TEMPER

EXIGENCE / requirement	SPÉCIFICATIONS / specifications	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
HARDNESS	88 - 92 HRC	5	82 - 90 HRC

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
20	30	848.3018
		(12) 848.3018 JOB. 188220
		(12) 848.3018 JOB. 188222
		(10) 848.3314 JOB. 188230
		(10) 848.3318 JOB. 188231
		(10) 848.3318 JOB. 188232
		(40) 848.3711 JOB. 188266
		* VALISE

5/2/18

COMMENTAIRES / comments

APPROUVÉ par / Approved by:



METCOR
7

DATE: 2018-01-09

APPROUVÉ

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
324794	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
38843	N/A	A2		
SPECIFICATIONS DU PROCÉDÉ processing specifications				
VAC HARDEN				
HARDEN AND TEMPER				
EXIGENCE / requirement	SPÉCIFICATIONS / specified		TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
HARDNESS	58 - 62 HRC		5	59 - 60 HRC
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description		
94	30	646.3013 (12) 646.3013 JOB. 168220 (12) 646.3015 JOB. 168222 (10) 646.3314 JOB. 168230 (10) 646.3315 JOB. 168231 (10) 646.3316 JOB. 168232 (40) 646.9711 JOB. 168266 1 VALISE		

COMMENTAIRES / comments

VAC HARDEN 1800F, 1:30 HR
DOUBLE TEMPER 400F, 2 HRS

Heat treatment (HT) was performed with equipment that meets the requirements of requested specification. All HT operations were performed in compliance with the required HT specification and all verifications have been performed and documented. No unauthorized changes were performed in regards to the HT. We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

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Le traitement thermique (TT) a été fait en utilisant des équipements en conformité avec la spécification demandée. Toutes les opérations de TT ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandés ont été faites et documentés. Aucun changement n'a été faite par rapport au TT. On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiées.

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METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

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Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
324794	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

le contenu. Toute exportation ou réexportation non autorisée est interdite.

APPROUVÉ par / Approved by:

Isabel Cragg
Isabel Cragg
Technician

DATE: 2018-02-01